

## OCEAN GALES AND STORMS, OCTOBER, 1932—Continued

Vessel	Voyage		Position at time of lowest barometer		Gale began	Time of lowest barometer	Gale ended	Lowest barometer	Direction of wind when gale began	Direction and force of wind at time of lowest barometer	Direction of wind when gale ended	Direction and highest force of wind	Shifts of wind near time of lowest barometer
	From—	To—	Latitude	Longitude									
NORTH ATLANTIC OCEAN—Continued													
West Madaket, Am. S. S.	Antwerp-----	Mobile-----	50 30 N	1 00 W	Oct. 23	8 p., 23	Oct. 24	29.63	SW-----	WSW, 9	WNW----	WSW, 9	WSW-W.
Marie Leonhardt, Ger. S. S.	Bremen-----	Searsport, Me.-----	51 12 N	26 05 W	Oct. 26	Noon, 26	Oct. 26	29.92	W-----	W, 8-----	NW-----	NW, 10	
Hoxie, Am. S. S.	Cork-----	New York-----	50 44 N	14 51 W	do-----	4 a., 27	Oct. 28	29.64	NW-----	NW, 7-----	NW-----	NW, 10	Steady.
Gonzenheim, Ger. S. S.	Newcastle on Tyne.	Batwood, Newfoundland.	57 32 N	25 10 W	Oct. 28	11 p., 28	Oct. 29	29.62	WSW----	WNW, 8	NW-----	WNW, 10	W-WNW.
Themisto, Du. S. S.	Durban-----	Montreal-----	41 28 N	52 40 W	do-----	9 a., 29	Oct. 30	29.82	S-----	SW, 6-----	SW-----	WSW, 9	SW-WNW.
Motocarline, Belg. M. S.	Antwerp-----	Baytown-----	50 21 N	2 14 W	Oct. 29	10 p., 29	Oct. 31	29.37	W-----	S, 9-----	NNW----	WSW, 9	S-W-NW.
Marie Leonhardt, Ger. S. S.	Bremen-----	Searsport, Me.-----	49 20 N	42 17 W	Oct. 30	Noon, 30	do-----	29.72	SW-----	WSW, 10	W-----	WSW, 10	Steady.
Themisto, Du. S. S.	Durban-----	Montreal-----	44 32 N	56 14 W	do-----	1 a., 31	do-----	29.86	SW-----	SW, 7-----	SW-----	WSW, 9	SW-WNW.
NORTH PACIFIC OCEAN													
Stlemmestad, Nor. M. S.	San Pedro----	Yokohama----	41 21 N	173 53 E	Oct. 2	Noon, 5	Oct. 4	29.68	S-----	W, 8-----	NNW----	WNW, 9	SW-W.
Stanley Dollar, Am. S. S.	Philippines----	Los Angeles----	24 42 N	136 49 E	do-----	Noon, 3	do-----	29.27	N-----	NW, 11-----	W-----	NW, 11	N-NW-W.
Silveray, Br. M. S.	Gorontalo-----	San Francisco----	44 22 N	159 36 W	do-----	7 a., 5	Oct. 7	29.34	SW-----	SE, 7-----	S-----	E, 10	SE-SSW.
Kiyo Maru, Jap. S. S.	San Pedro-----	Yokohama-----	36 00 N	174 40 W	Oct. 3	8 p., 3	Oct. 4	29.78	WSW----	W, 7-----	NW-----	WNW, 8	WSW-W.
Pres. Polk, Am. S. S.	Honolulu-----	Kobe-----	32 55 N	145 00 E	Oct. 4	5 p., 4	do-----	29.05	SSE-----	SSE, 10	W-----	SSE, 10	Steady.
New York, Am. S. S.	Dairen-----	San Francisco----	43 40 N	148 55 E	do-----	8 a., 5	Oct. 5	28.90	NE, 9-----	NW-----	NW-----	NE, 9	ENE-NE.
Koyo Maru, Jap. S. S.	Yokohama-----	Los Angeles----	36 46 N	146 33 E	Oct. 4	Mdt., 4	do-----	28.60	SSE-----	SE, 12-----	NW-----	SSW, 12	SE-SSE.
Holystone, Br. S. S.	Panama-----	Vancouver-----	14 15 N	95 45 W	Oct. 5	6 a., 6	Oct. 6	29.82	N-----	NNE-----	NNE-----	N, 9	N-NNE.
Potter, Am. M. S.	Shanghai-----	San Pedro-----	43 00 N	167 30 E	do-----	1 a., 7	Oct. 8	29.17	SW-----	WNW-----	NNE-----	NW, 9	W-NW.
Golden Wall, Am. S. S.	Siain, P. I.-----	San Francisco----	40 10 N	175 25 W	Oct. 6	4 p., 6	Oct. 7	29.39	W-----	WSW-----	W-----	W, 8	W-WSW.
Soyo Maru, Jap. M. S.	San Francisco----	Yokohama-----	47 20 N	172 23 W	Oct. 7	2 a., 7	Oct. 10	28.71	W-----	NW, 2-----	W-----	W, 9	NW-W.
New York, Am. S. S.	Dairen-----	San Francisco----	46 30 N	170 27 E	Oct. 8	2 p., 10	do-----	29.66	WNW----	WNW-----	WNW----	WNW, 9	Steady.
Stanley Dollar, Am. S. S.	Philippines----	Los Angeles----	38 30 N	161 51 E	Oct. 9	10 a., 10	do-----	29.39	SE-----	SW, 10-----	W-----	SW, 10	S-SW-W.
Golden Sun, Am. S. S.	Columbia River.	Yokohama-----	48 30 N	146 55 W	Oct. 10	2 a., 10	do-----	28.81	SW-----	WNW, 8	W-----	WNW, 8	WNW-SE.
Soyo Maru, Jap. M. S.	San Francisco----	do-----	45 18 N	170 20 E	Oct. 12	4 a., 12	Oct. 13	29.65	W-----	SSE, 3-----	W-----	W, 8	SSE-W.
Do-----	do-----	do-----	36 37 N	143 37 E	Oct. 17	3 a., 17	Oct. 17	29.52	NW-----	NW, 8-----	NW-----	NW, 9	ENE-NW.
Niagara, Br. M. S.	Victoria-----	Honolulu-----	46 35 N	128 44 W	Oct. 13	2 p., 13	Oct. 15	28.94	S-----	S, 7-----	NW-----	W, 10	S-SW.
Stanley Dollar, Am. S. S.	Philippines----	Los Angeles----	43 05 N	152 58 W	Oct. 17	5 a., 18	Oct. 18	29.53	SSE-----	S, 10-----	W-----	S, 10	SSE-S-W.
Grays Harbor, Am. S. S.	T s u g a r u Strait.	Puget Sound----	49 55 N	179 02 E	Oct. 20	4 p., 22	Oct. 22	29.47	SSE-----	WSW, 8	W-----	WSW, 9	WSW-WNW.
Tyndareus, Br. S. S.	Yokohama-----	Victoria-----	49 58 N	167 28 W	Oct. 25	9 a., 26	Oct. 27	30.07	S-----	S, 8-----	SW-----	S, 9	S-SSW.
Oregonian, Am. S. S.	Balboa-----	Los Angeles----	14 55 N	94 03 W	Oct. 27	4 p., 27	do-----	29.86	N-----	N, 8-----	NNE-----	N, 10	Steady.
Kiyo Maru, Jap. S. S.	Yokohama-----	San Pedro-----	39 42 N	166 30 E	Oct. 30	8 a., 30	Nov. 1	do-----	ESE-----	ESE, 5	SSE-----	SE, 8	ESE-SSE.

## NORTH PACIFIC OCEAN, OCTOBER, 1932

By WILLIS E. HURD

**Atmospheric pressure.**—The average pressure over the North Pacific Ocean for October, 1932, in general departed very little from normal. The Aleutian low was strongly developed, with pressures from the western Gulf of Alaska to the central Bering Sea averaging less than 29.6 inches. The North Pacific high crested near the California coast. A rather peculiar pressure abnormality occurred in the China Sea, with Naha reading 0.08 inch above and Manila 0.06 below the average.

TABLE 1.—Averages, departures, and extremes of atmospheric pressure at sea level, North Pacific Ocean, October, 1932, at selected stations

Stations	Average pressure	Departure from normal	Highest	Date	Lowest	Date
	Inches (1)	Inch (1)	Inches (1)	(1)	Inches (1)	(1)
Point Barrow	29.57	-0.08	30.54	25, 31	28.60	8
Dutch Harbor	29.58	-0.05	30.52	31	28.60	8
St. Paul	29.58	-0.01	30.50	5	28.36	19
Kodiak	29.88	+0.01	30.53	5	29.23	14
Juneau	30.06	+0.05	30.56	24	29.47	13
Tatoosh Island	30.02	+0.01	30.25	25	29.72	7
San Francisco	29.83	-0.08	29.96	28, 31	29.74	3, 15
Mazatlan	30.01	+0.01	30.12	15	29.84	4
Honolulu	29.99	-0.04	30.30	26	29.76	29
Midway Island	29.85	-0.01	29.90	7, 31	29.74	24
Guam	29.81	-0.06	29.88	7, 9	29.70	23
Manila	29.98	+0.08	30.18	11	29.80	3
Naha	29.95	+0.04	30.16	11, 21	29.42	3
Chichishima	29.92	-0.02	30.22	14	29.40	4
Nemuro						

1 Data for 19 days only—not used.

NOTE.—Data based on 1 daily observation only, except those for Juneau, Tatoosh Island, San Francisco, and Honolulu, which are based on 2 observations. Departures are computed from best available normals related to time of observation.

**Cyclones and gales.**—During the month the region of the North Pacific high was unusually exempt from

cyclones. The majority of Lows moved in higher latitudes, and comparatively few gales occurred south of latitude 35° N. The number of days with gales was somewhat in excess of that for September, and the weather was rougher, owing to the greater frequency of disturbances, but the winds increased but little in violence, and in our reports no extratropical gales exceeded force 10. In the region of their greatest frequency, south and southwest of the central Aleutians, moderate gales were frequent, but those in excess of force 7 occurred on a few days only in any locality. The accompanying table of gales shows their distribution.

**Tropical disturbances.**—Apparently three disturbances of tropical origin occurred in far eastern waters. The earliest originated on the last of September, and on the 1st to 3d of October moved slowly northward as a typhoon in the vicinity of the Ogasawara Islands. On the 4th, with greatly increased speed, it passed southeastern Honshu, and was southeast of the Kuril Islands on the 5th. This storm on the 4th caused the highest wind velocity, force 12, thus far reported for the month, and caused gales of force 11 and 10 on the 3d and 5th, respectively.

The second disturbance originated east of the North China Sea on or about the 7th and moved northeastward at some distance from the Japanese coast until the 10th, when it entered the low-pressure region of the Aleutians. During its passage gales of force 9 to 10 were reported from the Ogasawara Islands northward.

The third tropical cyclone developed in lower Philippine waters on the 23d, and from the 24th to 27th it lay in the channel between Luzon and Taiwan, later moving west-southwest into the South China Sea. There are no details as to its intensity except for reports of northerly gales near Taiwan and Luzon on the 26th.

In Mexican waters northers of moderate gale force occurred on the 6th and 21st over or south of the Gulf of Tehuantepec, of strong gale force on the 5th, and of whole gale force on the 27th.

On the 11th the Tehuantepec region and neighboring Central American waters were disturbed by a depression which crossed the Yucatan Peninsula from the Caribbean into the Gulf of Mexico. On the Pacific side this depression resulted in moderate gales.

*The northeast monsoon.*—Owing to the strong formation of anticyclones on the Asiatic coast, the northeast monsoon blew with considerable force in the China Seas on several days.

*Fog.*—Fog lessened materially over the whole Pacific, except along the American coast, as compared with its occurrence in September. It formed on only a few scattered dates along the northern routes. It was observed on 19 days at one place or another on the California coast.

## CLIMATOLOGICAL TABLES

## CONDENSED CLIMATOLOGICAL SUMMARY

In the following table are given for the various sections of the climatological service of the Weather Bureau the monthly average temperature and total rainfall; the stations reporting the highest and lowest temperatures, with dates of occurrence; the stations reporting the greatest and least total precipitation; and other data as indicated by the several headings.

The mean temperature for each section, the highest and lowest temperatures, the average precipitation, and the greatest and least monthly amounts are found by using all trustworthy records available.

The mean departures from normal temperatures and precipitation are based only on records from stations that have 10 or more years of observations. Of course, the number of such records is smaller than the total number of stations.

*Condensed climatological summary of temperature and precipitation by sections, October, 1932*

[Compiled by Annie E. Small]

[For description of tables and charts, see REVIEW, January, p. 37]

Section	Temperature								Precipitation							
	Section average	Departure from the normal	Monthly extremes						Section average	Departure from the normal	Greatest monthly		Least monthly		Amount	Amount
			Station	Highest	Date	Station	Lowest	Date			Station	Amount	Station	Amount		
Alabama	62.8	-1.7	Thomasville	89	25	Valley Head	30	7	6.43	+3.76	Dothan	12.41	Union Springs	1.27		
Arizona	62.2	-0.4	Agua Caliente	101	7	Alpine	10	18	1.22	+0.45	Pinal Ranch	3.95	Tuba City	0.00		
Arkansas	60.8	-1.6	3 stations	94	18	Lead Hill	26	6	3.41	+0.24	Arlberg	6.12	Springbank	0.91		
California	60.0	+0.2	Greenland Ranch	106	6	Lake Sebrina	11	18	0.35	-0.80	Cuyamaca	5.52	77 stations	0.00		
Colorado	45.7	-1.2	Las Animas	90	1	Pearl	-15	25	0.93	-0.30	Steamboat Springs	3.05	3 stations	T.		
Florida	73.7	+0.7	4 stations	94	14	Garniers (near)	37	17	4.31	+0.04	Miami	17.43	Kissimmee	0.72		
Georgia	64.8	-0.1	Millen	92	19	2 stations	29	7	5.09	+2.36	Hartwell	10.76	Fargo	1.92		
Idaho	45.5	-1.2	Orofino	91	3	Blackfoot Dam	0	20	1.12	-0.30	Roland	5.29	2 stations	0.00		
Illinois	54.3	-1.0	2 stations	86	2	2 stations	21	30	3.91	+1.19	Elgin	6.09	Quincy	2.20		
Indiana	54.7	+0.1	do.	89	2	Marengo	22	30	3.93	+1.19	Laporte	6.85	Vevay	2.20		
Iowa	49.6	-1.9	4 stations	90	2	2 stations	19	30	1.79	-0.61	Tipton (near)	4.80	Creston	0.32		
Kansas	55.2	-1.7	5 stations	92	16	Leoti	14	29	0.99	-1.12	Phillipsburg	3.27	Tribune	0.18		
Kentucky	56.8	-1.4	2 stations	85	13	Farmers	24	30	3.31	+0.54	Jenkins	5.33	Cynthiana	1.85		
Louisiana	66.2	-1.9	Plain Dealing	94	18	Robeline	29	27	5.23	+1.91	Lafayette	10.16	Minden	0.30		
Maryland-Delaware	56.7	+0.5	Western Port, Md.	88	3	Grantsville, Md.	22	31	6.39	+3.51	State Sanatorium, Md.	12.68	Friendsville, Md.	3.53		
Michigan	48.5	-0.5	Paw Paw	81	2	Roscommon (No. 2)	14	13	4.70	+1.97	Harrisville	7.63	Alpha	0.99		
Minnesota	43.0	-2.7	2 stations	87	1	Mizpah	5	9	1.51	-0.42	Pigeon River Bridge	5.59	Reeds	0.25		
Mississippi	62.8	-2.4	5 stations	89	12	Stoneville	31	6	6.32	+3.67	2 stations	9.95	Scott	1.33		
Missouri	55.7	-1.7	Lamar	90	18	2 stations	22	16	3.45	+0.56	Greenville	7.32	Oregon	0.99		
Montana	42.1	-2.2	Big Timber	87	1	Browning	-10	9	1.50	+0.51	Crow Agency	5.26	Helena Valley	0.31		
Nebraska	48.9	-2.2	3 stations	93	2	Gordon	2	10	1.29	-0.31	Bruning	2.28	Kimball	0.10		
Nevada	51.1	+0.1	Logandale	96	15	Zorra Vista Ranch	5	10	0.18	-0.46	Beatty	1.95	12 stations	0.00		
New England	51.9	+2.3	Waterbury, Conn.	86	9	Keene (near), N. H.	16	14	4.95	+1.38	Pinkham Notch, N. H.	10.04	Eustis, Me.	1.22		
New Jersey	56.2	+1.4	Bridgeton	89	4	Runyon	21	31	5.85	+2.18	Charlottesville	9.64	Asbury Park	3.53		
New Mexico	52.2	-1.3	Agricultural College	93	16	Crown Point	2	25	1.02	-0.17	Redrock	4.25	Ramah	0.06		
New York	52.5	+2.6	5 stations	93	12	2 stations	20	14	6.04	+2.71	McKeever	11.08	Caneadea Dam	2.47		
North Carolina	60.5	+0.6	Nashville	89	4	Mount Mitchell	14	28	7.46	+4.03	Rock House	17.16	Fayetteville	3.21		
North Dakota	38.3	-5.2	New England	90	1	Westhope	-3	29	2.31	+1.27	Larimore	4.11	Tagus	0.66		
Ohio	54.4	+0.7	Middleport	85	3	Peebles (near)	24	30	3.47	+0.79	Lima	5.34	Philo (I)	1.61		
Oklahoma	60.7	-1.2	Cherokee	97	18	Boise City	20	29	2.09	-1.19	Oklmulgee	5.77	Buffalo	0.24		
Oregon	50.5	+1.0	Jacksonville	100	3	2 stations	5	24	1.87	-0.01	Headworks	13.66	Freemont	0.07		
Pennsylvania	53.8	+1.4	Hyndman	86	3	3 stations	20	14	5.31	+2.05	Newport	11.90	Sharon	1.78		
South Carolina	63.7	+0.1	Trenton	89	24	2 stations	31	7	6.99	+3.93	Caesars Head	14.51	Aiken	3.47		
South Dakota	44.7	-3.5	Vermillion	94	2	Pollock	6	31	1.18	-0.16	Rockford	3.30	Onida	0.46		
Tennessee	58.7	-0.8	Newbern	89	1	Rugby	25	28	5.39	+2.57	Tullahoma	9.87	Milan	2.24		
Texas	65.2	-2.4	Booker	100	17	Alpine	23	26	0.93	-1.83	Brownsville	6.36	15 stations	0.00		
Utah	47.7	-0.8	St. George	89	14	Woodruff	0	26	0.62	-0.63	Santaquin	2.90	Thompsons	0.00		
Virginia	58.0	+0.6	Christchurch	86	1	Emory	26	7	7.01	+3.88	Roanoke	12.01	Dahlgren	3.83		
Washington	50.0	+0.9	Rock Island	92	2	Republic	10	29	3.55	+0.38	Paradise Inn	17.27	Mansfield (near)	T.		
West Virginia	54.9	+0.5	Martinsburg	90	16	Marlinton	22	29	3.91	+0.82	Harpers Ferry	7.21	Dam 19, Ohio River	2.12		
Wisconsin	45.5	-2.4	5 stations	84	11	2 stations	14	10	1.99	-0.44	Beloit	4.87	Tomahawk	0.73		
Wyoming	39.9	-2.7	2 stations	89	11	do.	-7	10	1.24	-0.06	Dome Lake	4.58	Leo (near)	0.16		
Alaska (September)	42.2	-2.1	Petersburg	70	28	McKinley Park	5	22	4.15	+0.65	Yakutat	23.61	Shishmaref	0.39		
Hawaii	74.3	+0.5	Mahukona	93	1	Kanalohuluhulu	45	18	2.44	-3.23	Hiloa-Manawaio-puna Divide	18.00	6 stations	0.00		
Puerto Rico	78.8	+0.7	Central Aguirre	96	18	Guineo Reservoir	51	1	7.44	-0.77	San German	15.29	Santa Isabel	2.11		

<sup>1</sup> Other dates also.